CLAIMS

What is claimed is:

1. A laminated glass comprised of at least two layers of transparent glass with adjacent glass layers separated by a transparent solid non-glass interlayer or an air cavity, wherein at least one said transparent non-glass interlayer or said air cavity contains a device comprised of at least one element selected from the group consisting of solid state lighting, heat sensors, light sensors, pressure sensors, thin film capacitance sensors, photovoltaic cells, thin film batteries, liquid crystal display films, suspended particle device films, and transparent electrical conductors.

2. The laminated glass of Claim 1, wherein said device is further comprised of a microprocessor chip that is programmed to control said solid state lighting and to cause said solid state lighting to display a sequence of images.

3. The laminated glass of Claim 1 that is used as an exterior window or wall, wherein said device is comprised of a light sensor, a liquid crystal display film and means to control the translucency of said liquid crystal display film whereby as the intensity of the external light impinging on said sensor increases said means reduces said translucency of said liquid crystal display film and as the intensity of said external light impinging on said sensor decreases said means increases said translucency of said liquid crystal display film to provide variable shading of the interior.

4. The laminated glass of Claim 1 that is used as an exterior window or wall, wherein said device is comprised of a light sensor, a suspended particle device film and means to control the translucency of said suspended particle device film whereby as the intensity of the external light impinging on said sensor increases said means reduces said translucency of said suspended particle device film and as the intensity of said external light impinging on said sensor decreases said means increases said translucency of said suspended particle device film to provide variable shading of the interior.

5. The laminated glass of Claim 1 in the form of a conventional laminated glass double glazed window, wherein said device is contained within said air cavity of said conventional laminated glass double glazed window and said device comprises:

a) a photovoltaic cell to convert the solar energy impinging on said photovoltaic cell to electrical energy; and

b) a thin film battery to store said electrical energy.

6. A laminated glass comprised of at least one layer of transparent glass and at least one layer of transparent polymer with adjacent glass layers, adjacent transparent polymer layers and adjacent glass and transparent polymer layers separated by a transparent non-glass interlayer or an air cavity, wherein at least one said transparent non-glass interlayer or said air cavity contains a device comprised of at least one element selected from the group consisting of solid state lighting, heat sensors, light sensors, pressure sensors, thin film capacitance sensors, photovoltaic cells, thin film batteries, liquid crystal display films, suspended particle device films, and transparent electrical conductors.

7. The laminated glass of Claim 6, wherein there is provided externally to said laminated glass a microprocessor chip that is programmed to control said solid state lighting and to cause said solid state lighting to display a sequence of images.

8. The laminated glass of Claim 6 that is used as an exterior window or wall, wherein said device is comprised of a light sensor, a liquid crystal display film and means to control the translucency of said liquid crystal display film whereby as the intensity of the external light impinging on said sensor increases said means reduces said translucency of said liquid crystal display film and as the intensity of said external light impinging on said sensor decreases said means increases said translucency of said liquid crystal display film to provide variable shading of the interior.

9. The laminated glass of Claim 6 that is used as an exterior window or wall, wherein said device is comprised of a light sensor, a suspended particle device film and means to control the translucency of said suspended particle device film whereby as the intensity of the external light impinging on said sensor increases said means reduces said translucency of said suspended particle device film and as the intensity of said external light impinging on said sensor decreases said means increases said translucency of said suspended particle device film to provide variable shading of the interior.

10. A luminous stair tread or floor tile comprised of the laminated glass of any of Claims 2-5, wherein said device further comprises a

pressure sensor to detect the pressure of a foot impacting said tread and to vary the illumination produced by said device depending on presence or absence of said pressure.

11. A luminous stair riser, stair guard rail, floor tile, interior partition or safety sign comprised of the laminated glass of Claim 1.

12. A luminous stair tread or floor tile comprised of the laminated glass of Claim 6, wherein said device further comprises a pressure sensor to detect the pressure of a foot impacting said tread and to vary the illumination produced by said device in response to the presence or absence of said pressure.

13. A luminous stair riser, stair guard rail, floor tile, interior partition or safety sign comprised of the laminated glass of Claim 6.

14. A hollow structural glass block within which there is an air cavity, wherein said air cavity contains a device comprised of at least one element selected from the group consisting of solid state lighting, heat sensors, light sensors, pressure sensors, thin film capacitance sensors, photovoltaic cells, thin film batteries, liquid crystal display films, suspended particle device films, and transparent electrical conductors.

15. The hollow structural glass block of Claim 14, wherein said device is further comprised of a microprocessor chip that is programmed to control said solid state lighting and to cause said solid state lighting to display a sequence of images.

16. The hollow structural glass block of Claim 14, wherein said device is further comprised of a transparent thin film capacitance sensor to detect the motion of an object across the exterior surface of said hollow structural glass block and to vary the illumination produced by said device in response to said motion.

17. A structural laminated glass block comprised of n layers of transparent glass and n -1 layers of transparent solid non-glass interlayers, wherein $n \geq 2$; all said layers of transparent glass and all said layers of transparent solid non-glass interlayers have essentially the same lateral dimensions; adjacent said transparent glass layers are separated by one of said transparent solid non-glass interlayers; and at least one of said layers of transparent glass and transparent solid non-glass interlayers is positioned to extend beyond the other said layers on two adjacent sides of said structural laminated glass block.

18. The structural laminated glass block of Claim 17, wherein said solid non-glass interlayers are comprised of SentryGlas® Plus ionoplast interlayer or polyvinyl butyral.

19. A glass wall or window comprised of the structural laminated glass block of any of Claim 17.

20. The structural laminated glass block of any of Claim 17, wherein at least one of said solid non-glass interlayers contains a device comprised of at least one element selected from the group consisting of solid state lighting, heat sensors, light sensors, pressure sensors, thin film capacitance sensors, photovoltaic cells, thin film batteries, liquid crystal display films, suspended particle device films, and transparent electrical conductors.

21. The structural laminated glass block of Claim 20, wherein said device is further comprised of a microprocessor chip that is programmed to control said solid state lighting and to cause said solid state lighting to display a sequence of images.

22. A glass wall or window comprised of the structural laminated glass block of Claim 20.

23. A safety illumination system comprising:

(a) a sensor to detect the existence of a safety problem;

(b) an illumination device comprising at least one organic light- emitting diode; and

(c) means to convey a signal from said sensor to said illumination device to impose a voltage across said at least one organic light- emitting diode of said illumination device to activate the said illumination device and thereby provide the desired illumination.

24. A smoke detection safety illumination system comprising:

(a) a sensor to detect the presence of smoke;

(b) an illumination device comprising at least one organic light- emitting diode; and

(c) means to convey a signal from said sensor to said illumination device to impose a voltage across said at least one organic light- emitting diode of said illumination device to activate the said illumination device and thereby provide the desired illumination.

25. A gas detection safety illumination system comprising:

(a) a sensor to detect the presence of a gas;
(b) an illumination device comprising at least one organic light- emitting diode; and
(c) means to convey a signal from said sensor to said illumination device to impose a voltage across said at least one organic light- emitting diode of said illumination device to activate the said illumination device and thereby provide the desired illumination.

26. A motion detection safety illumination system comprising:
(a) a sensor to detect the presence of motion;
(b) an illumination device comprising at least one organic light- emitting diode; and
(c) means to convey a signal from said sensor to said illumination device to impose a voltage across said at least one organic light- emitting diode of said illumination device to activate the said illumination device and thereby provide the desired illumination.

27. A power outage detection safety illumination system comprising:
(a) a sensor comprising a light-sensing device;
(b) an illumination device comprising at least one organic light- emitting diode; and
(c) means to convey a signal from said sensor to said illumination device to impose a voltage across said at least one organic light- emitting diode of said illumination device to activate the said illumination device and thereby provide the desired illumination.